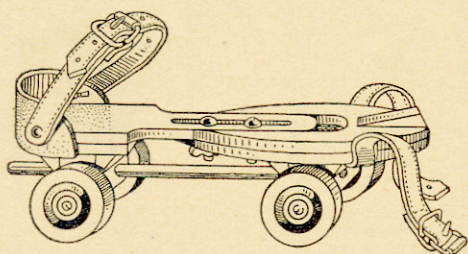


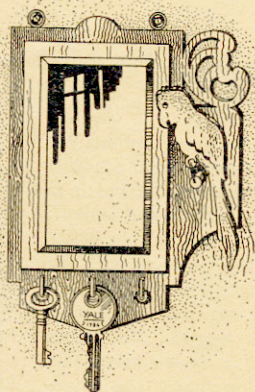
Hobbies

WEEKLY

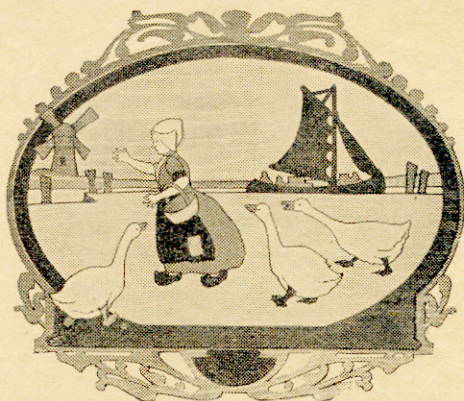


HOME
MADE
ROLLER
SKATES

INLAID
PICTURE
IN WOOD



A
NOVEL
KEY
RACK



September 25th. 1937

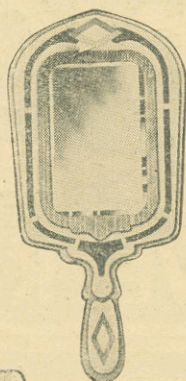
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Vol. 84. No. 2188

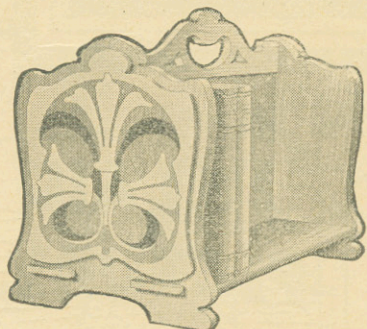
THE FRETWORKER'S AND
HOME CRAFTSMAN'S JOURNAL

INLAY

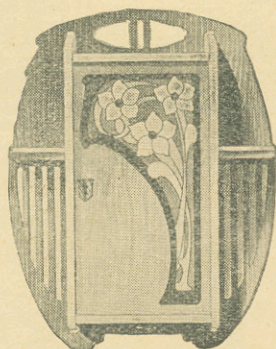
Some fretworkers imagine that INLAY designs are only for experts. This is a mistaken idea. If you can cut ordinary fretwork, you can make the designs shown here. And you'll say they are the most beautiful things you ever made. Try INLAY now!



No. 1756. Hand Mirror, 12ins. long overall. Mahogany, with four coloured woods for inlay 3/6; postage 6d. The Mirror costs 9d.; postage 3d.

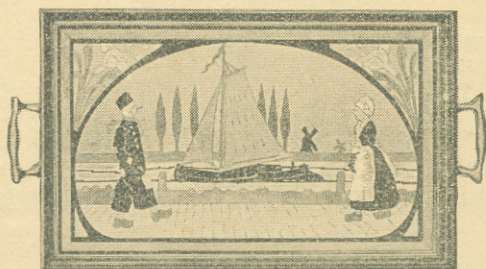


No. 1567. Bookstand, 13ins. long. This delightful piece of work is cut in Mahogany, with four contrasting woods for the inlay. The parcel costs 6/6; postage 9d.



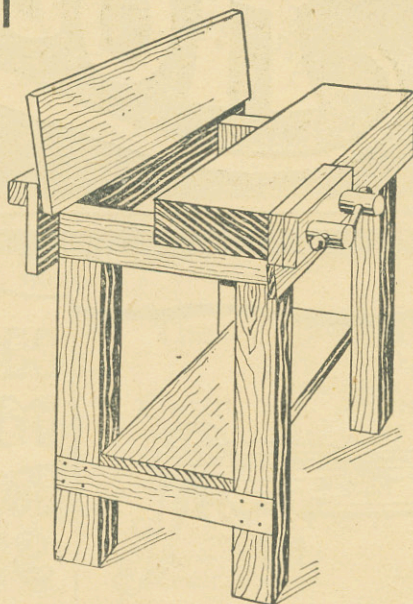
No. 1522. Cabinet, 15ins. high. Beech, with panels of Sycamore, Mahogany, Satinwood and Padouk for inlay costs 5/-; postage 6d.. The Lock, Hinges, Escutcheon, etc. cost 1/2; postage 2d.

Write to Hobbies Ltd. Dereham,
for List of Inlay Designs



No. 8G. Tray, 16ins. long. This charming tray is a favourite everywhere. The wood supplied includes special moulding for the edge, and inlay woods of contrasting colours. Price 7/6; postage 9d. The handles are 1/7 pair, and glass for covering inlay 1/-; postage 9d.

How's This for a BENCH?



Solid
3-inch
Top
•
Legs
3-inch
Square
•
Tool
Chest
under
Lid

RUGGED and STRONG
Practically
Indestructible!

**TWO
HANDY
SIZES**

3 feet

2ft. 6ins. high, 1ft. 4ins. wide, with 12 in. double-screw wooden vice.

24/-

Carr. Fwd.

3ft. 6ins.

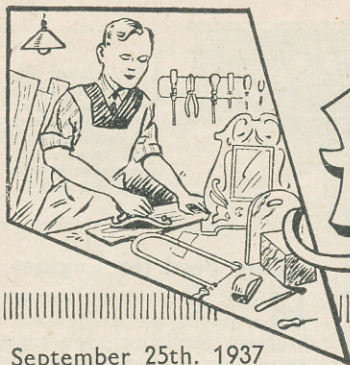
2ft. 8ins. high, 1ft. 8ins. wide, with 15 in. double-screw wooden vice.

27/6

Carr. Fwd.

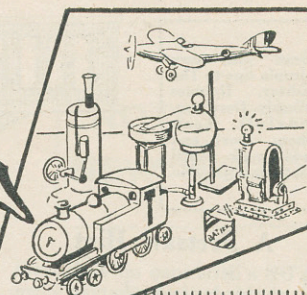
For as little as a guinea you can now buy from Hobbies a Bench that will stand up to years and years of wear. Solid 3 inch top dowelled to the framework for strength and rigidity. Legs and cross rails 3 by 3 inch. The hinged lid, when raised, reveals a receptacle running almost the whole length of the bench. This is just the place you have always wanted for storing tools, etc. A tool rack for holding saws, chisels, etc., is also provided. The double screw vice is of hardwood. Don't wait a day longer..... get YOUR bench now!

HOBBIES LTD. DEREHAM



Hobbies

WEEKLY



September 25th. 1937

Vol. 84. No. 2188

IT is interesting to learn that the wonderful Imperial Airways liner Heracles has now flown over a million miles and carried 80,000 passengers. In view of the constant progress and change in flying, one is apt to forget the daily routine work of these liners to the Continent and beyond. The Heracles is particularly interesting to us because we had a design sheet in March 1935 of a model of it. This was, of course, when it was the latest thing in passenger planes, and it is pleasing to know of its continued popularity. A reader's picture showing its realism is printed on page 610. The model is thus still worth making as an exhibition piece or for those keen on planes. The Design is No. 194 Special and, with instructions and material, is still obtainable.

IAM glad to hear of a new Trophy which has been presented to the Senior Division of the Hobbies Fretwork Club of Observatory, South Africa. This is to be competed for by members between the ages of 14 and 21 years. I am sure all connected with the Club are grateful to Mr. A. O. Edwards and I hope it will serve as an example to others interested in the Hobbies League Club. A Championship Trophy in the form of a Shield is an asset for keenness and enthusiasm. It can be awarded and held for six or twelve months according to ruling and may be offered for general all-round work, or for a special competition piece open to all members. Anyhow, the idea will no doubt suggest new activities and interest to other League Clubs.

YOU already have been told about a Stage Coach Model coming. Well, if you get next week's issue you will find the gift sheet there double the usual size, with full details for a really striking piece of work. It is, too, one of the simplest we have yet had, with very little cutting or shaping to be done. As usual, too, we are supplying a complete plan giving details of colours to finish it.

OF course, this sheet alone is going to be a big attraction next week, but in order to mark the beginning of the season, and the first number in a new volume I have increased the pages, put in other specially interesting stuff and made it rattling good value—even at 4d. A new Calendar Picture printed in colour is also a gift with each copy, whilst the articles will cover no end of useful things to do and make.

THERE will be a new and interesting Competition, too, which I know will appeal to every reader because it is so simple and yet so intriguing, whilst there will be special articles and patterns for our younger readers.

HOBBIES of all kinds are coming more and more to the fore, and people of all ages are looking for something to do in their spare time. Proof of this is shown in some of the Evening Classes which have now commenced their winter session. They are educational in a pleasing and enjoyable sense, and I am delighted to find that classes are organised in some places for music, home handyman jobs, dancing, drawing, and cookery, in addition, of course, to the ever popular one of general woodworking and handicraft work. These classes are undoubtedly worth attending, both for the learning you acquire and for the solid enjoyment of doing something really useful and practical in your spare time.

EVERY handyman who uses an oil can on his bicycle, fretmachine, or lathe or any other job, knows the annoying tendency there is for the oil to leak out when the can is laid down. There is now, I find, a handy little gadget to overcome this, which will be a great boon. It is called a Valvespout and, as its name implies, contains a valve feed which allows the oil exit but which prevents leakage, when the valve is closed. It is quite cheap and small containers cost only 10½d.

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Next Week's Gift Design—Model Stage Coach
Correspondence should be addressed to: The Editor, Hobbies Weekly, Dereham, Norfolk, and a stamp enclosed with the Reply Coupon from Cover iii if a reply is required. Particulars of Subscription rates, Publishing, Advertising, etc. are on cover iii.

The Editor

Send your own simple tips to The Editor, Hobbies Weekly, Dereham, Norfolk. Keep them short and add rough pencil sketches if possible.

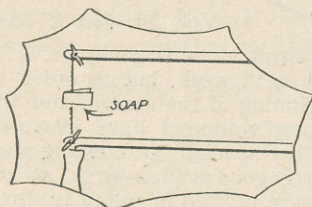
HINTS AND TIPS



For original Tips published the sender will receive a Hobbies Handy Propelling Pencil. We cannot acknowledge or print all tips sent in.

A Fretsaw Hint

RUB a little soap up and down the blade of your fretsaw when it works stiffly, and you will find it



goes much more easily. The same applies if your blade is running hot and burning the wood.—(R. J.)

Cleaning Hands

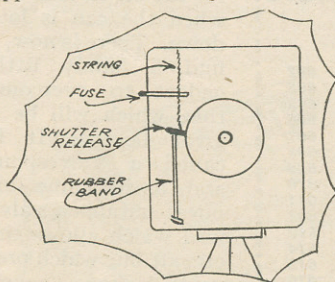
AFTER painting or varnishing, the paint sticks to the hands and if no turpentine is available, a little metal polish rubbed into the hands gets it off. After rubbing it in, wash the hands in soap and water.—(E.D.K.)

Filler for Heel

FOR repairing a wooden heel when broken and you cannot put a rubber heel on, take some of Hobbies plastic wood and mould it on. When quite dry, trim and fix the rubber heel. It will be as a new heel.—(J. Egar).

Self Photography

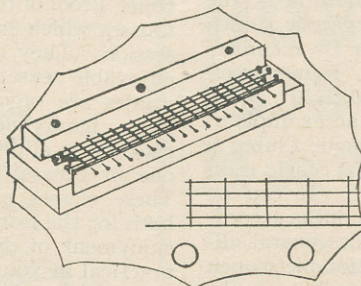
OFTEN when you take a photograph of a group you wish that you yourself could appear in it. The diagram here-



with explains quite simply how this is managed. When the fuse burns through to the string the string breaks a rubber band and pulls the shutter back.—(M. Bond).

Model Boat Rails

RAIL for model boats can be made from pins and flower wire as described below. Two strips of wood, as shown, are screwed together and small nails driven in so suitable lengths of wire can be strained between them at the required distance apart. A strip of cardboard is then tacked in position, and pins are stuck through this at equal distances so they lie across the wires at right angles. The points of the pins just penetrate the strip of wood. This arrangement keeps the wires and pins in place for soldering. Flux is then put on the pins where they touch the wires and solder applied



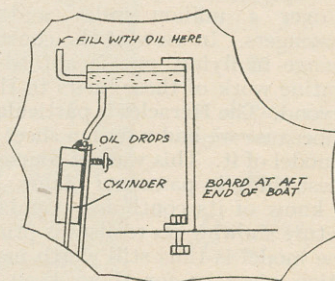
sparingly. Care should be taken not to let excess of solder clog the wires. When each pin is securely soldered, clean off the flux and cut through each pin just above the first wire with a small file. The rails can then be removed from the support, and fitted to the model.—(D. Jones).

Horse-shoe Pen Rack

AHORSE-SHOE picked up during a hike in the country can be turned into an attractive pen rack with very little trouble. Small horse-shoe nails are placed in the holes and a thin metal strip is soldered to the toe to form a support. The nails hold the pens in position. To make it look attractive paint in bright colours.—(J. K. Pereira).

Drip Feed for Engines

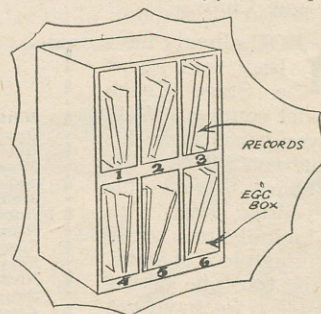
HERE is a drip lubricator suitable for a Hobbies or ordinary oscillating type engine steamboat. After it was made I tried it on my own steamboat



and it proved quite successful in helping it to travel much faster, and further. You need a small flat tin, into which two $\frac{1}{4}$ in. copper pipes about 1 in. and $\frac{1}{2}$ in. are soldered. Solder it to a thin bracket and then screw it on to the board at aft end of the boat. When completed, fill with oil. The vibration of ship will cause oil to drip on to oscillating cylinder as shown, and so increase speed of ship.—(T. Hooper).

Record Box

BUY an egg box which has two shelves, and divide each shelf into three compartments. When this is done, you can put



records into different compartments, according to your taste for Dance Music, Concert Music, Humorous Records, Novelty Records, Accordion Records or Borrowed Records.—(W. Williams).

AN INLAID PICTURE IN WOOD

THIS week our free design sheet offers another opportunity to the fretworker to prove his ability in cutting out one of those picturesque inlaid panels which are a delight to look at, and an interesting piece of work to complete. Anyone who has not attempted this class of cutting previously is well advised to make an attempt now because it provides a totally different type from the ordinary fretwork, and at the same time completes a picture which is entirely made up in wood for the admiration and astonishment of any friends.

Those who are conversant with the different classes of timber know the variety of colours which are obtainable. By use of these colours, a realistic picture is built up as striking and colourful as any painting. You can imagine what a combination is obtainable from, say, satinwood, padouk, mahogany, oak and whitewood.

In satinwood you have a soft lemon shade, in padouk you have a brilliant red which stands out in contrast to the ordinary red of mahogany. Oak lends an atmosphere of dignity and whitewood has a flat creamy surface which tones well with the others.

Cutting the Parts Together

At first appearance it may seem almost impossible to cut parts correctly in order to build up a picture such as that illustrated, where the pieces all fit together closely and in a perfectly flat surface.

Like a good many other things, however, when you know how it is done the procedure is quite simple, and any fretworker of normal ability can and should undertake it. Shortly explained, the picture is made by cutting four very thin boards at the same time so that actually you have four complete pictures in the same wood.

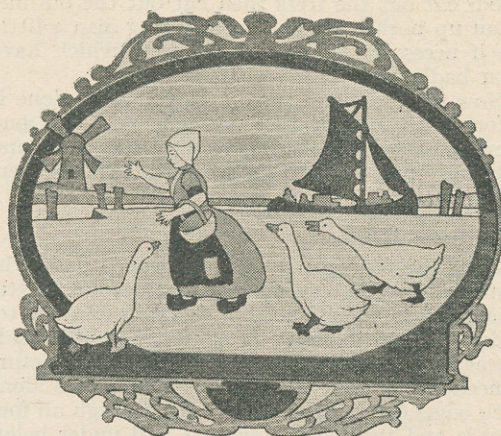
MATERIALS SUPPLIED

For making this Inlaid picture we supply the "A" panel of mahogany, with mahogany, padouk, satinwood, and sycamore, for inlay for 4/- (post free 4/6). A pair of brass hangers are also supplied for 1d.

Then by choosing a piece of one and a piece of another in the different colours, and fitting them like a jigsaw together, they form the complete panel of multi-coloured parts.

Actually, of course, you have the opportunity of making four complete inlaid pictures all done at the one cutting operation, and by this means are able to finish all four panels quite easily.

At the same time, however, it is not always possible to obtain a suitable combination for all these pictures, because some of the wood may not be suitable to that particular part.



Patterns on our Gift Design 2188

For instance, the sky in one part would be of whitewood, whereas in another panel it must be of one of the dark woods like padouk, and this is hardly in keeping with the suitable background of a light blue sky. However, it is quite easy to obtain at least two admirable pictorial results.

A Lettered Key

To make it easier still for the beginner, and as a general guide even for the more experienced, the panel is printed with letters upon it indicating the most suitable piece of wood to use; and if this is carried out in conjunction with the instructions which follow, a charming piece of work will result.

Those who have not previously undertaken any of this inlaid work, will be well advised to make their first attempt on four odd scraps of thin wood. They can quite easily trace a small portion of the picture on to the uppermost board and try their 'prentice hand at that.

They will then "get the hang" of it and be able to proceed with much more confidence and ability on the larger panel illustrated here. Read through these details first, and you will quite understand the procedure and be able to execute the work immediately.

So far as this Dutch scene is concerned, the wood suggested for the actual inlaid picture is mahogany, padouk, satinwood and sycamore, and when complete the whole thing is glued to a fretted background in mahogany.

Inlay Boards Needed

For the inlaid part we require boards 12½ ins. long and 9 ins. wide of 1/16 in. thick. For the background board a piece 13 ins. long and 11 ins. wide is necessary, and for this one of the standard panels (A) of Hobbies is ideal. The backboard is cut from ½ in. wood and the tiny overlay appearing upon it is a piece of padouk 1/16 in.

Whether you cut the backboard or the inlaid work first is immaterial, because both must be completed before they can be put together.

Let us deal first with the simple outline of the backboard. Paste the design down upon the

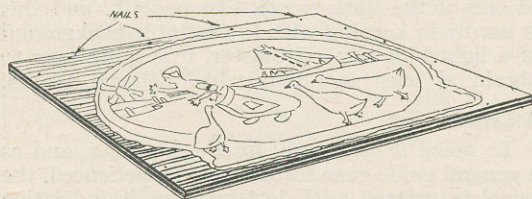
wood, cut out the frets then cut out the outline. Clean up both back and front, using also a little file if necessary on any of the frets which have been badly cut.

Now for the inlaid work. If you have done it before with any of these designs we have had previously, the procedure is exactly the same, and you will know how to go to work. If not, here is the method.

Four Pieces Together

Take the four panels of thin wood, paste the inlaid pattern on one of them—it does not matter which—then with $\frac{3}{4}$ in. thin fretnails pin all together. All nails must, of course, be put outside the actual design because every part of the picture is needed in wood. Put three or four pins along each edge, driving them carefully through all four boards and turning the surplus nail under below the bottom one. See the boards are tightly fitted together.

We are now ready for cutting and for the work a fine grade—No. 0 or 00—fretsaw should be



Four pieces of wood nailed together with pattern pasted on selected. A coarse saw, you will understand, will make a very wide cut between the actual parts and so prevent them coming as close together as they should. Get a fine saw in your machine or handframe, therefore, and if you break any keep to the same grade right through.

One drill hole will give us an opening to cut a good many of the parts, and here again a fine drill point should be used. The saw proceeds from this drill hole round each of the parts marked, returning every time to the point where it started. As the geese, however, are separate in the main work, leave them until the figure and the uppermost part of the panel has been completed. The outside edge is undertaken last.

How to Begin

A good point to make the drill hole is where the quay joins the elliptical framework on the extreme right. You will see there, a piece marked M and a piece marked W. Put the drill points right on the cutting line and in the corner, then thread your saw through the four pieces of wood in the usual way.

First of all cut round the little piece marked W, and immediately four parts the same shape fall out. The only one you want to complete the panel according to the key, is whitewood (W). Lay this aside and discard the rest.

Then cut out the little piece above it marked M, and take out the piece of mahogany. Lay this above the whitewood part which was saved, and proceed to cut out the next portion marked M, representing the post.

Here again the mahogany piece is required, and next come the two tiny pieces of mahogany and whitewood followed by another post also in mahogany.

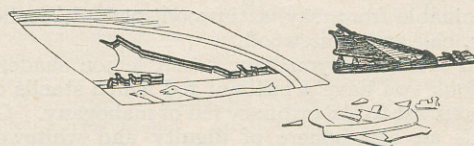
Go along gradually cutting towards the bow of the boat, then cutting out the various pieces which form that shape. Before cutting the large sail you will require to get out the four little quadrants forming the loop or the sail to the mast.

Independent Pieces

As these are independent pieces, a drill hole must be made in the corner of each, and the saw threaded for cutting separately. The same applies to the two triangular pieces of satinwood at the top of the sail.

Generally, you see, the cutting lines follow each other right through, and gradually you are cutting away the wood in the main design and building up the picture on the bench or table. Pass right along to the figure, cutting that out and selecting the various parts required. Then go along the quayside again and work out the mill.

You will see one of the mill sails projects into the border. Do not at the moment cut that sail,



How the picture is gradually formed

or you will break up the border and loosen the parts.

The Outer Parts

Having cut the principal portions you still have the three geese and the ground work. A drill hole will be needed for the geese as before, and here again you will be well advised to leave the lefthand goose until last, because it breaks through the border. When all the parts have been cut, you can take out the mill sail, the lefthand goose, then finally the outline of the ellipse and the straight bottom edge.

This last operation will, of course, release the four boards and must be undertaken carefully to prevent breakage.

Fitting and Cleaning

Having got all the parts required, do not attempt to clean them up until they are fitted together in their position. For this purpose glue down the framework of the oval in padouk in its proper position to the fretted backboard of mahogany. Clamp or weight the two together, and leave the glue to set before going further.

Now we can add the tiny pieces of inlay work inside the panel. Apply the glue thickly to the backboard, and press the little pieces hard into the glue so it squeezes up round the edges. Press the inlay parts together to form the picture, and when all are in place put a thin piece of paper

(Continued on opposite page)

HOW TO DO WATERPROOFING

WATERPROOFING is a job we are called upon to do at all times of the year. In the summer we are anxious to make our ground sheets and tents waterproof for camping out, and in the winter, oilskins are always useful as a protection against the winter's usual weather.

Oilskins are of course produced from cotton, linen or even silk dressed with boiled linseed oil, but the best results are obtained by the use of "double-boiled oil," this giving the familiar yellow colour, and drying better than ordinary boiled oil. Its waterproofing qualities too are superior. To get black waterproofs, you have only to add some oil black or vegetable black to the mixture.

A Canvas Tent

Now if you are going to waterproof a tent canvas, you should choose if possible, a bright sunny day, so that you can hang them afterwards out in the open. But failing this, a fairly warm kitchen will do equally well, except of course for the fact that hanging out-of-doors means that they are not so much in your way.

Spread your canvas out on a large table; if it is new, don't wash it beforehand. Have your oil in a wide vessel at hand, and except for the colouring matter, do not add anything to it. Apply the oil to the canvas with a fairly stiff brush—an old clothes brush will do—but be sure to give it a good even coat and don't try and saturate it at any one point.

Drying and Sewing

As you finish each piece, lightly fold it, and put it away until the whole job has been completed, then pull them out straight, and commence your drying process—either inside or outside according to conditions. In any case, they will need to be left for several days, after which you can sew the pieces together, and give them two more coats of oil, taking special care to well cover the seams with oil, to prevent the rain dripping through the sewn parts.

It is possible to sew the pieces together before applying the oil at all, but it is best to give the separate pieces one coat first, in order that the material may be shrunk, and so prevent it from wrinkling and puckering up afterwards. You will find that the subsequent coats go on much more easily than the first, and it is a good plan

to repeat the oiling every summer before your camping out holiday commences. Canvas tents like coats of oil to keep them satisfactory, just the same as woodwork requires coats of paint.

Chemical Treatment

Now of course, there are certain materials which do not permit of "oiling" in this way, or at least they would not give the same satisfaction when completed. These have to be "chemically" waterproofed. Such a process does not affect their appearance at all, and what it really means is that you fill up the fibres of the cloth with a soap that will not dissolve in water.

Two Solutions

To carry this out successfully, you have to prepare two solutions. No. 1 is a solution of one pound of the best yellow soap in one gallon of water, and No. 2 is one pound of alum in a gallon of water.

Both solutions should be prepared fairly hot, but use No. 1 warm, and No. 2 slightly warm.

You immerse the garments or fabric in No. 1 and allow it to remain in soak for at least half an hour, so that the soap gets quite thoroughly into every particle of the material.

Now remove it, wring it out thoroughly over the vessel, smooth out the wrinkles in it as much as possible, and put it in the alum solution for another half hour's treatment.

Wring it out from this, rinse it in clean water, and pass it through the rollers of a mangle if possible. If not, wring it out as dry as you can. Hang the garment up in the open air preferably to dry, and if you have done the job properly, you will have a garment that will withstand the weather quite satisfactorily.

Pressing Out

You will need, of course, to iron or press out the material when it is dry, just as you would had you set about washing it for cleaning purposes, but it is important to remember that garments look better if they have been dried gradually. That is why it is always preferable to do your waterproofing on a bright sunny day, so that they may get a good drying start out of doors, even if they have to be finished off inside.

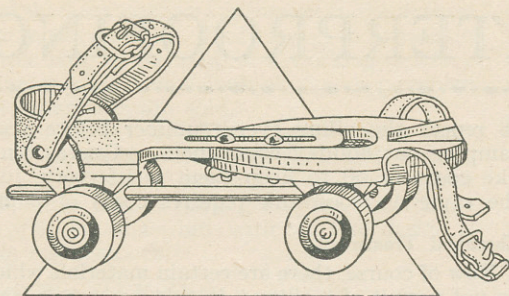
Inlaid Panel—(Continued from opposite page)

over the whole lot and weight down under another large board to keep the whole surface flat. Leave the glue to set again, then clean up very thoroughly with glasspaper.

Use a coarse grade, but be sure to keep it on a block of wood or other flat surface so it does not pick up or tear out any of the tiny pieces of the panel. Use a coarse grade first and finish up as

usual with a fine grade paper.

Finally, the whole thing can be given a coat of polish after, if you think fit, staining. We would not, however, advise any stain being put on because it will colour the woods down to an unnatural shade. Use Hobbies Lightning Polish straight on to the wood, or after a woodfiller has been added.



IS there really nothing that cannot be made from wood? Why, you can even make a pair of roller skates with it—and a few other odds and ends! The illustration shows quite a serviceable article which, although intended primarily for 8-year-old youngsters, could be enlarged upon to suit the footwear of enthusiasts older by a few odd years.

Obviously, weight counts infinitely more than the size of the would-be skater. For instance, a tall, lanky chap with big feet could make himself a pair of these skates and go about with a careless grace and ease of mind, yet a Billy Bunter might turn out a pair to suit his rather small feet—and fall right through them at the first go!

The Wear and Tear

Then there is the wear and tear of the skates. As the wheels are the wooden centre-sunk variety stocked by Hobbies Ltd., it would be advisable, in the case of a heavy lad or child, to "boss" the centres with $\frac{1}{4}$ in.-bore or brass tubing.

Then again, if you can afford the price of a set of 2in. wagon casters (No. 6184) which cost only 2/- or 2/6 post free, these (when removed from their forks) would make a smooth-running and lasting pair of skates. Incidentally, you are doubtless wondering how the skates—if constructed from $\frac{1}{4}$ in. birch plywood as suggested by the sketch—would not break in the centre under one's weight. Actually, the full weight is borne by the wheels at the heel and toe.

The Skate Parts

As stated, however, the skates were chiefly designed for youngsters between 7 and 9 years old. The outlines of the various parts shown in Figs. 1, 2 and 3 will suit their footwear and can be adjusted in severe cases.

Mark out the foot shape and heel piece given at Fig. 1 and cut out the former to separate the

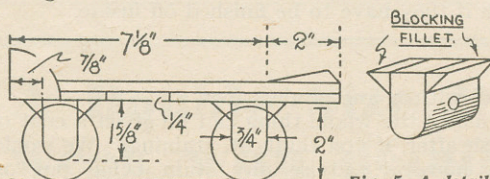


Fig. 4—A side

Fig. 5—A detail of the axle

slide from the sole. The elongated bolt slot is only required in the slide, with two suitable holes made in the support piece (Fig. 2). All these

MAKE YOURSELF A PAIR OF ROLLER SKATES!

parts are cut from $\frac{1}{4}$ in. stuff, the heel guard piece being cut from $\frac{1}{4}$ in. plywood. The slot and holes are cut to take $\frac{3}{16}$ in. by $\frac{3}{16}$ in. thick carriage bolts.

Having cut out the parts, glue and nail the heel piece beneath the heel slide. The guard of plywood is similarly attached around the heel flush with the bottom (see Fig. 4). Glue and nail the foot support beneath the slide sole part, the toe piece going to its mortise.

Axle Blocks

When foot parts are neatly glasspapered, cut out two blocks of hardwood $2\frac{1}{4}$ ins. long by $1\frac{1}{2}$ ins. wide by $\frac{3}{4}$ in. thick and round the ends as seen at Figs. 4 and 5. The blocks are attached to the skate parts (in the position shown by the elevation) with a couple of $1\frac{1}{2}$ in. by 8 flathead iron screws.

Before doing so, however, drill a $\frac{3}{8}$ in. hole through each block as suggested, doing this as true as possible. When glued and screwed in place, glue blocking fillet on either side as extra security. The skates so far should be painted with bright enamel colours and allowed to thoroughly dry.

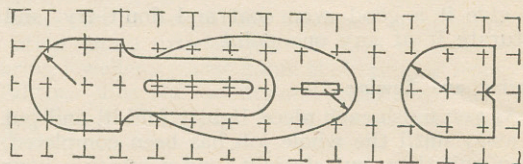


Fig. 1—Outline of heel, slide and foot shape in 1in. squares

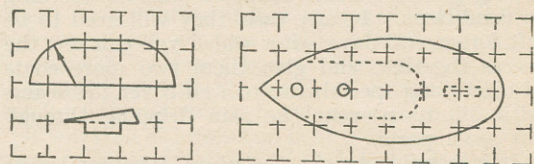


Fig. 2—The foot support piece

Fig. 3—Heel guard and toe piece in 1in. squares

Assuming they are ready for completion, insert the bolts mentioned. A washer and thumb screw holds the skate parts firmly together and facilitates adjustment, but as an extra precaution, a rod of $\frac{3}{8}$ in. dowelling is fitted.

The dowel is about 8ins. long. Insert it through the block holes to test the alignment. If too
(Continued foot of opposite page)

MATERIALS REQUIRED

- 2 pieces birch plywood 9ins. by 3ins. by $\frac{1}{4}$ in. thick.
- 1 piece ditto 4ins. by 1ins. by $\frac{1}{4}$ in. thick.
- 1 piece dowelling 8ins. by $\frac{3}{8}$ in. diam.
- 2 axle blocks $2\frac{1}{4}$ ins. by $1\frac{1}{2}$ ins. by $\frac{3}{4}$ in. thick.
- 4 angle blocks $2\frac{1}{2}$ ins. by 1in. by $\frac{1}{2}$ in.
- 4 wooden wheels 2ins. diam. (No. 604).

"MOVING PARROT" NOVELTY KEY RACK

"A NICE little bracket—but why the odd-looking kind of parrot?" you are probably thinking. Well, that is just the reason it was included in the design. Everybody who sees it cannot help but comment upon it, and then, not satisfied with that, they must touch it to see what happens.

Being perched on a stub of dowelling by means of a tiny watch spring, the parrot or cockatoo swings backwards and forwards gaily. Interested, they touch it again, and that is where you tell them to look at the other "queer bird" in the mirror!

While the novelty can be thus used as a practical joke, however, it is also a useful one. The mirror is a fairly large one measuring 4ins. by 2½ins. and the hooks below are ideal for odd keys. If you have more than three keys, of course, they can be either fixed on a split ring or hung loosely on each hook.

Cutting the Back

An outline of all the parts is provided in the reticule of ½in squares at Fig. 1. When marking out the back, be sure to include the mirror aperture or cut-out as seen by the dotted lines only.

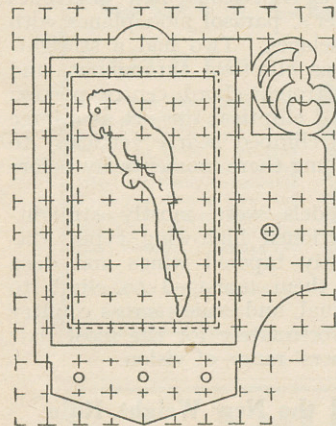
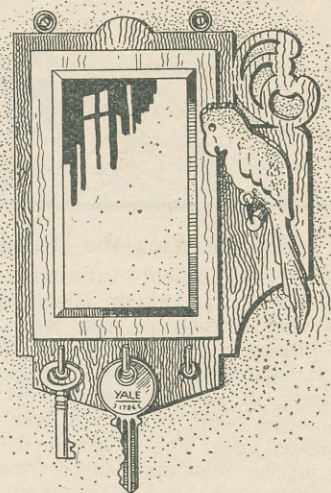


Fig. 1—Outline of the parts needed in ½in. squares

leave the markings for "filling in" with coloured enamels.

When all have been neatly cut and glasspapered,

With the
fretsaw
from odd
pieces of
fretwood



glue the overlay evenly over the glass aperture to show a 1/16in. flange all round. If the back is cut from plywood, the waist—which should be cut out in one piece—can be reduced to suit the thickness of the glass by removing a ply. On the other hand, you could "pack" the mirror at the back with rectangles of cardboard until level with the work.

The Parrot Perch

For the perch, use a piece of ½in. dowelling about 1in. long. Before gluing in place, find a small piece of thin watch spring ½in. wide by ½in. long. A piece of folded piano or banjo stringing might serve if you can connect the parrot and perch suitably.

With the spring, a fine saw cut is made in the bird's feet as shown, the spring being driven in sidewise, this also applying to the perch. Having this done, the whole parts are glazed or clear varnished. If you paint up the parrot in bright enamels, the rest should be enamelled.

When dry, fit in the mirror, pack it, then cover with a thin piece of card or brown paper which is damped before pasting or gluing. Attach the hooks at the front, with two bracket eyes at the back which completes the work.

MATERIALS REQUIRED

- 1 piece mahogany fretwood. 7ins. by 5ins. by 3/16in.
- 1 piece satinwood. 4½ins. by 2ins. by ½in.
- 1 piece birch plywood. 5ins. by 3½ins. by 1/16in.
- 1 bevelled mirror (No. 5718). 4ins. by 2½ins.
- 2 bracket eyes (No. 120).
- 3 watch hooks (No. 122).

Roller Skates—(Continued from opposite page)

tight, reduce the thickness of the dowel, then make a saw cut in one end. This is pushed into the fore block and glued and wedged, the rest remaining free to slide in the rear block.

The straps are made from a couple of dog collars such as the plain leather kind. Cut one in half and fix it to the guard with single bifurcated

rivets; the other is attached underneath the toe with roundhead screws.

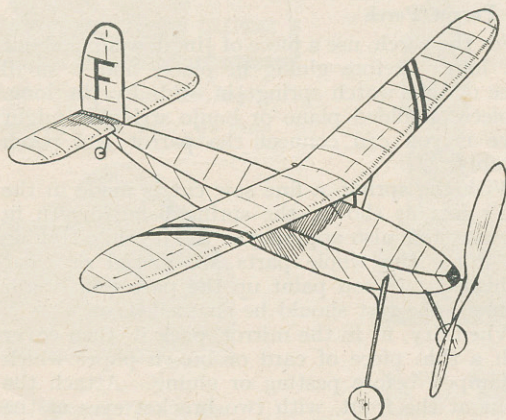
Screw the wheels to the axle blocks. A metal washer (to suit the thickness of the roundhead screws used) should be on each side of the wheels which could be oiled a trifle to prevent undue squeaking.

MODEL AIRCRAFT TOPICS

France Wins the Wakefield Cup

THE Wakefield International Trophy, the biggest award in Model Aeronautics, has this year been won by a French youth, M. Fillon. At Fairey's Great West Aerodrome, on August 1st, his plane encountered a thermal current, in which it soared to a great height, and after being timed for over 11 minutes, disappeared from sight. Fortunately, he had taken the advice of officials and written the aerodrome telephone number on the model, and presently a message came that it had landed intact, except for a small piece chipped from the propeller, 16 miles away! This fine flight helped him to secure the best average of the day, in spite of the fact that his plane was brought back too late for him to make his third flight.

Although Great Britain failed to retain the Trophy which Albert Judge brought back from



M. Fillon's Cup-winning model

America last year, British modellists did quite well. Two of them, R. N. Bullock, of London, who won the Trophy several years ago, and R. T. Howse, of Bristol, secured second and third places. Teams from France, Germany, Belgium, Holland and Sweden took part, also one youth from Norway, while Canada, South Africa and New Zealand sent their champion models to be flown for them by British modellists.

Successful Designs

AND what of the models which thus distinguished themselves? The winner's plane, designed by M. Vincere, and depicted in our illustration, was of a type popular in America. It had one rather curious feature, a fuselage of diamond cross-section. The wing, of constant

chord, except for elliptical tips, was mounted on two wires a short distance above the top longeron.

The wing-section was the highly popular R.A.F.32. It was built entirely of balsa, and covered with tissue of an orange shade, which helped the timekeepers to keep it in view.

Mr. Bullock lost his original model on a trial flight, and had only two weeks in which to build another. In spite of the many small parts which went to its making, he succeeded in producing a perfect piece of construction. It was a very graceful 'shoulder-wing' monoplane, with a circular-section fuselage.

Mr. Howse flew one of the few geared models in the contest, a high-wing type with 'monocoque' fuselage—a thin shell of balsa sheeting.

Wakefield Types from Abroad

READERS may be interested and helped to hear something of the types which foreign modellists built to the Wakefield specification.

Four of the five Americans flew machines similar to the winner's, parasol monoplanes with diamond-section fuselages. Two had a straight-chord wing, one was elliptical throughout, and the fourth had a straight-chord centre portion without dihedral, and elliptical tips set at a large dihedral angle. All climbed nearly vertically to about 50 feet, and hung there momentarily before levelling.

The German models were mostly straight-forward well-proportioned high-wing types, distinguished by slightly tapered wings and deep fuselages. One of them managed to climb to 2,000 feet in a thermal, and cruise across country for 16 minutes, unfortunately for the most part out of the timekeepers' range of vision.

Thermals and the New Weight Rule

ALl this talk of thermals may sound strange, in view of the fact that this year the minimum permissible weight of the models had been raised to 8oz. with the idea of eliminating this chance element.

Events proved, however, that under the conditions prevailing on Wakefield day, even heavy models will be affected. Whether the matter will be left there, or points awarded for qualities other than endurance, will not be known until the S.M.A.E. considers the 1938 Competition programme.

One can say that the new rule was responsible for the most interesting and diverse collection of models yet entered for the Wakefield contest.

The Airman

NITROGEN ARGON AND HELIUM

HOME CHEMISTRY



HAVING dealt somewhat lightly with the study of air in the last article, let us now take our subject more seriously and examine the properties of each individual gas contained in atmospheric air, in their proportionate order.

First comes nitrogen, which comprises nearly 80% of air, an astonishing proportion when you come to reflect upon the point. Although this is not usually regarded as so important a gas as for instance, oxygen or hydrogen, it serves a tremendously useful purpose in diluting the oxygen of the atmosphere, which would otherwise be so powerful as to cause practically everything to become highly inflammable.

In addition, nitrogen is very essential to life but

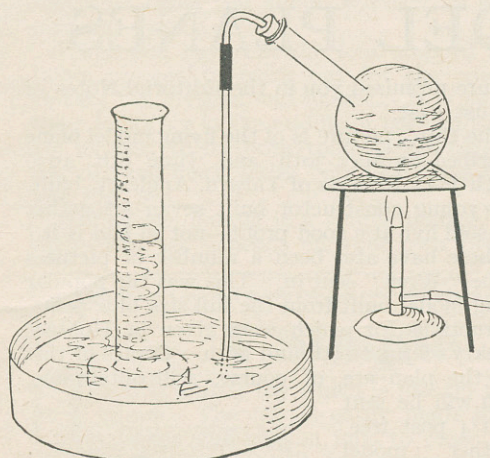
know that the nitrate obtained from Chilean saltpetre is used very largely for feeding the soil, but in addition to this, certain plants draw their nitrogen from the soil, naturally. All the cavities in soil are full of air, and the tiny bacteria to be found on the roots of leguminous plants such as beans and peas take the nitrogen from this air and form nitrates from it. This naturally enriches the surrounding soil.

As to animals, they obtain their supply of nitrogen from plants, and after digestion this is excreted and thus takes its place once more in the soil.

Making Nitrogen

In order to prepare nitrogen in your home laboratory, several methods may be adopted. One of the easiest is to heat in a flask a mixture of ammonium chloride and sodium nitrite, when sodium chloride, water and nitrogen are formed. Alternatively, by heating a strong solution of ammonium nitrite you split this salt up into water and nitrogen.

Since you may prefer to use a solution, dissolve



Apparatus for the preparation of nitrogen

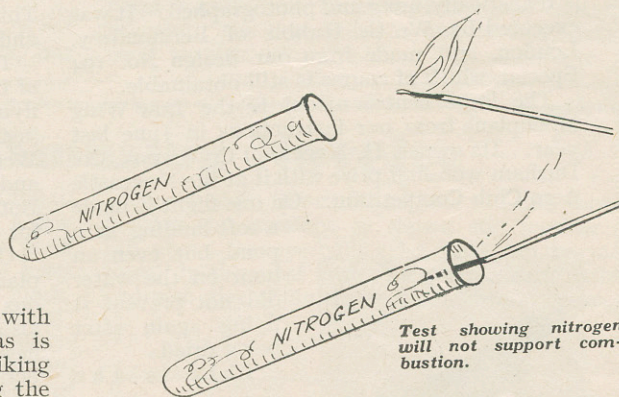
strangely enough, only when in combination with other elements. In its free state this gas is practically useless. It is lazy and inert, in striking contrast to its compounds which are among the most active and vigorous substances known.

The Discovery of Nitrogen

Nitrogen was first recognised in the breath of animals by Rutherford in 1772, but it was Lavoisier who proved it to be a component of air. It is devoid of taste, colour and odour, and is only slightly soluble in water. Litmus remains unaffected by nitrogen, and the gas neither burns nor supports combustion.

It has no effect upon limewater. It is strange then, that such a seemingly useless gas should play such an important part in our daily life, and the cycle goes something like this. It is in the form of nitrates that nitrogen does its work.

Readers who are interested in agriculture will



Test showing nitrogen will not support combustion.

about three grams each of ammonium chloride and sodium nitrite in 50 c.c. of water in a 100 c.c. flask on a tripod stand and sand-tray, light your Bunsen and collect the nitrogen which is given off, in the usual way over water. Take the precaution, however, of disconnecting at the rubber joint before all the gas is expelled.

You can easily test the fact that nitrogen will not support combustion by plunging a lighted taper into the jar; the flame will immediately be extinguished.

Really, there is not a lot that you can do with nitrogen in the way of experiments, owing to its disinclination to combine easily with other elements. One of its most important commercial uses is in

filling electric lamps and in high-temperature thermometers.

We have learnt that the comparatively rare gas argon forms about .8% of atmospheric air. This also is a very inert substance which you will hardly encounter in your experiments.

It was not until just before the beginning of the present century that Lord Rayleigh and Sir William Ramsay discovered argon in the atmosphere, although about 100 years previously Cavendish had met with the gas without knowing it. It is now made by passing atmospheric nitrogen slowly over turnings of magnesium heated to dull redness in a hard-glass tube. It is colourless, tasteless, and odourless, soluble in water to the extent of 4 volumes of gas to 100 volumes of water.

The Fascinating Helium

An element not yet mentioned as a component of air is that gas of which we hear so much every time there is an airship disaster—helium. After hydrogen it is the lightest substance known, and

its most important property is that it is incombustible, hence its supreme advantage over the highly inflammable hydrogen for filling airships and balloons.

Although there is a fair quantity of this gas in the natural gas fields of the United States, its comparative rarity can be realised when it is known that the proportion of helium in the atmosphere is about one volume in a quarter of a million volumes of air.

Three Rare Gases

There are three gases of even greater rarity present in the atmosphere, neon, krypton, and xenon, and they are all obtained from argon by a process more or less of elimination. We see a great deal of neon nowadays in modern lighting effects, but just reflect upon the fact that there is only one part of krypton to every 20,000,000 parts of air, and one part of xenon to every 170,000,000 parts of air! How would you like to be a scientist and spend your days working out such intricate calculations as these?

READERS' MODEL PLANES

HERE are three examples of the ability of readers in making up the model planes published in these pages. Each is wonderfully realistic, but each is of a different type. The first is really not flying at all, but is realistically hung and photographed. It was executed by W. G. Hubble of Bermondsey, London, and made from our design No. 194 Special, which of course is still obtainable.

The large centre model is the Low Wing Monoplane from our instructions in June last year. Its owner, H. Hagen, of Crawcrook, Co. Durham won first prize with it at the Newcastle Aero Club Competition. On one flight it made

a soft landing in a pond, but even an hour on the water did not prevent it flying again after being dried.

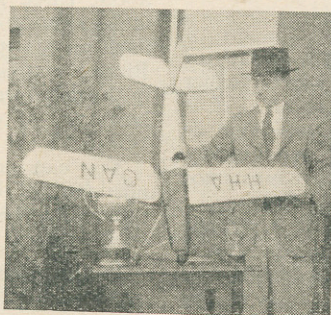
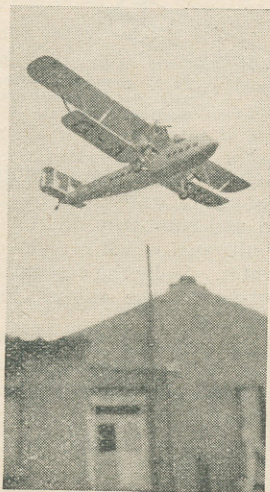
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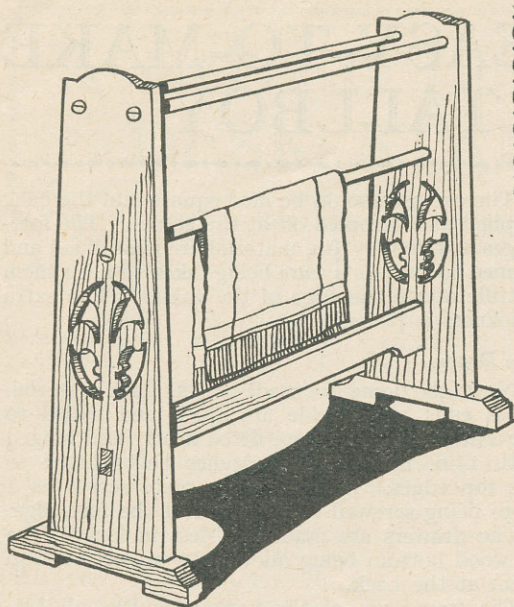
picture promised you in the Editorial Notes of August 21st.

The third picture is of the flying model plane described on May 30th. and June 6th. 1936 which J. C. Roberts of Talwrn, Anglesey, built. This young constructor built seven altogether and sold five at a good profit—not so bad is it?

There have also been a number of pictures of the "Wren" sent in. This was the popular flying model built from the full size blue print, instructions for which were given in Hobbies Weekly of June 19th and 26th. Copies of this and the plan are, of course, still obtainable. Both will be sent for 1/4 post free.

Other model planes from various designs are also shown in the new 1938 Handbook on sale at 6d.





A SIMPLE TOWEL RACK

on the bottom edge of each to fit into recesses cut in the feet as shown in Fig. 3.

The feet are from wood 12ins. long by 2ins. wide by 1½ins. thick. After drawing in and cutting the simple outlines, the recesses shown will be cut in, either ⅝ins. or ¾in. deep according to the thickness of the uprights. Glue in the uprights and add a couple of countersunk screws in each tenon.

The Rails

The rail connecting the uprights is 24ins. long by 3ins. wide and to lighten it in appearance the middle portion may be cut in as the sketch shows. Tenons are cut on the ends to fit the mortises in the uprights.

The three rods are each ⅜in. in diameter, 24ins. long. A saw-cut should be made in the ends to receive a very thin wedge of wood which is driven in and glued after the rods have been inserted in the holes. (See Fig. 4)

After the glue has hardened, both faces of the uprights should be cleaned thoroughly with coarse and fine glasspaper rubbing always in the direction of the grain of the wood.

It only remains to apply the stain and Hobbies Lightning Polish.

THE towel horse for the bathroom or for the spare bedroom is still largely in use, and, having received one or two requests lately for one more or less decorative in design, we put forward the suggestion shown here.

This is a design in which our fretworkers should be especially interested, because there is work for the saw in shaping the ends of the stand and in cutting the little decorative panels.

The ends or uprights should be made first, and two pieces of ⅝in. or ¾in. thick stuff will be prepared 36ins. long by 8ins. wide. Upon one of these pieces draw the simple outline (Fig. 1), and also the positions of the holes at the top to take the rods and the square mortise. The top of the mortise comes 7ins. up from the square end as shown and is 1½ins. deep, the width of it being either ⅝in. or ¾in. according to the thickness of wood used.

The Fretted Sides

For the little fretted panels it will be necessary to make a pencilled enlargement from Fig. 2 which shows a number of squares overlaying the design. Draw in the design through the squares, following each carefully. They measure 1in. across when put out full size.

Do all the fretcutting to the first upright and then use this for drawing round to get the correct outline for the second.

Next clamp both pieces together and bore all the holes with a ⅜in. twist drill. In marking out the uprights take note that there must be a tenon

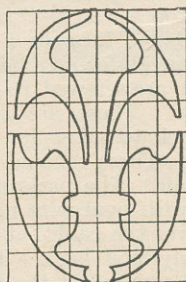


Fig. 2—Detail of the side frets drawn in ¼in. squares

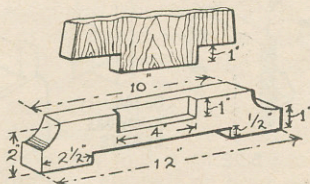


Fig. 3—Details of feet

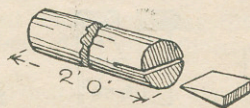


Fig. 4—Rail and wedge

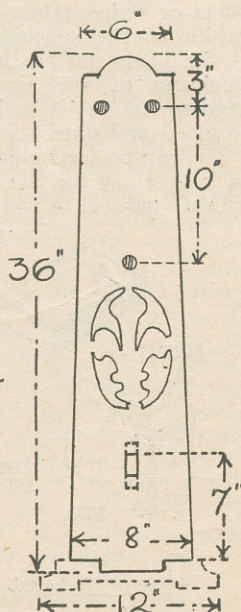
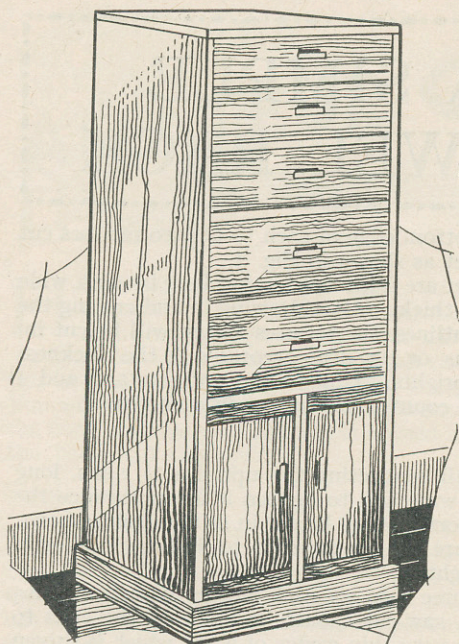


Fig. 1—Outline and detail of a side

CUTTING LIST

- 2 pieces satin walnut 36ins. by 8ins. by ⅝in.
- 1 piece satin walnut 24ins. by 3ins. by ⅝in.
- 1 piece satin walnut 24ins. by 2ins. by 1½ins.
- 3 dowel rods 24ins. long, ⅜in. diam.

AN EASY-TO-MAKE TALLBOY



THERE are few pieces of furniture so useful or so simple to construct as the tallboy illustrated in the drawings. It is of great utility in the living room or the bedroom. As is clearly shown herewith, the main carcase is made up of the two gables or sides 4ft. 2 $\frac{3}{4}$ ins. by 11ins., the bottom 14ins. by 11ins. and the top 16ins. by 11 $\frac{3}{4}$ ins. full. The front edge and two ends of the top are moulded. The top ends of the gables are rebated into the top.

Similarly the bottom is rebated into the sides. The rebates need only be about $\frac{1}{2}$ in. deep. Small fillets or strips 1 $\frac{1}{4}$ ins. by $\frac{1}{2}$ in. are screwed to the gables at the spacing shown. These are flush at the back and are held back to allow for the thickness of the fore-edge. These should be fixed so the gables make a pair. The parts may be glued and fixed together with oval wire nails.

The top projects slightly over the gables at the back to allow for the thin plywood back. This is made parallel to width and squared at the top.

The carcase should be held square and the back applied and trimmed off at the gables. The fore-edges of 1 $\frac{1}{4}$ ins. by $\frac{3}{4}$ in. material are next glued and pinned to the fillets, care being taken to keep them a trifle above the edge of the gables. The extra thickness is planed off.

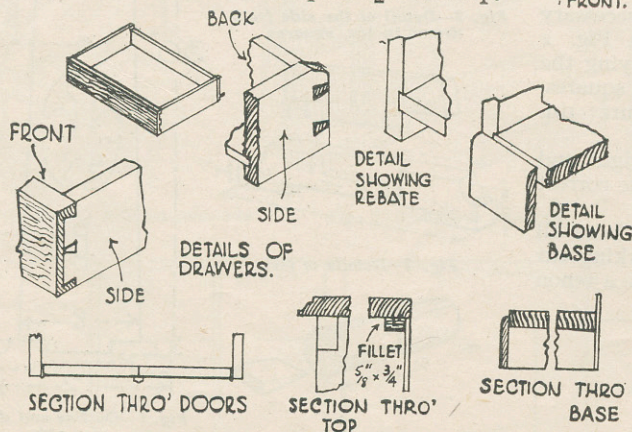
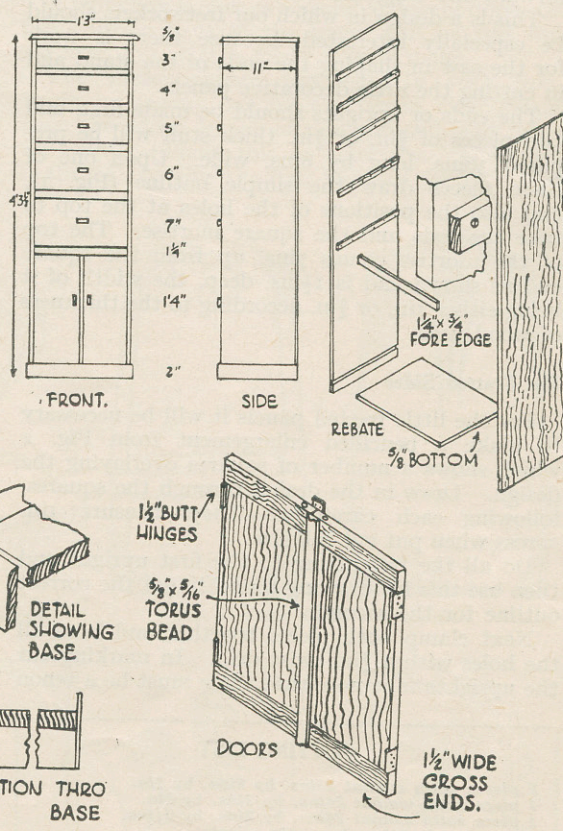
The Doors

Next, the doors are made of $\frac{3}{4}$ in. thick material. Cross ends 1 $\frac{1}{2}$ ins. wide are glued and nailed to prevent twist. They are fitted neatly and hinged with 1 $\frac{1}{2}$ in. butt hinges, catches being fitted to the top edges. A small brass plate serves as a stop, being screwed to the back of the fore-edge.

The drawers are made $\frac{1}{2}$ in. less in length, the plywood bottom being allowed to project to stop them at the back.

The fronts are of the various widths all $\frac{3}{4}$ in. thick sides and backs $\frac{1}{2}$ in. thick. The backs are made to stand down from the sides a little at the top edges. They are dovetailed in the usual

(Continued at foot opposite page)



A NOVEL LITTLE DESK STAND

YOU all know how these little novelties appeal, and how it is often a small piece of work made from odds and ends which is a delight to offer to anybody either as a gift or as a simple piece of work. Just look at the little Pen Rack here, complete with inkstand, pen holder and blotting pad. How many of these couldn't you make before Christmas and sell as simple pieces of work?

The whole thing is shown in detail on page 621 with complete patterns for the fretted overlay which is fixed to the base. Just half a dozen odd pieces of wood—any ordinary fretwood will do—a short time spent with the fretsaw and glasspaper, and you can complete the whole thing at very little cost. Let us see how the thing is made up.

First of all we have the base, a piece of wood $7\frac{1}{2}$ ins. long, 3 ins. wide and $\frac{1}{4}$ in. thick. In this we have to cut out two apertures which are shown by shaded lines on the pattern. Just lay the whole piece of paper on to the wood, cut, then put a pin through the corners of the square and rectangle there drawn. Cut out these two openings. They form the apertures in the base into which the inkpot and the little blotting pad fit.

Now for the overlay—shown as B on the sheet. Cut this out from $1/16$ in. wood but fix the board to another one before cutting to make it stronger and prevent breakage.

Here again you must cut out the shaded portions as well as the various fretted pieces, then clean the whole part up on both sides with glasspaper. Glue the overlay down to the base with the two openings above each other.

Backing Piece

A backing piece which forms a floor for the openings and an underbase at the same time is also cut from $1/16$ in. wood, and is slightly smaller than the thicker piece. It is piece C, $7\frac{1}{4}$ ins. long, $2\frac{3}{4}$ ins. wide, and this allows $\frac{1}{8}$ in. set back on all edges.

Tallboy—(continued from opposite page)

manner, the bottoms being fitted into grooves in sides and front.

They are glued up, allowed to harden, and then fitted and cleaned up. The drawer front should be stopped back $\frac{1}{8}$ in. from the face of the carcass.

The base, 2 ins. wide by $\frac{3}{4}$ in. thick, neatly rounded on the top edge, should be put on the

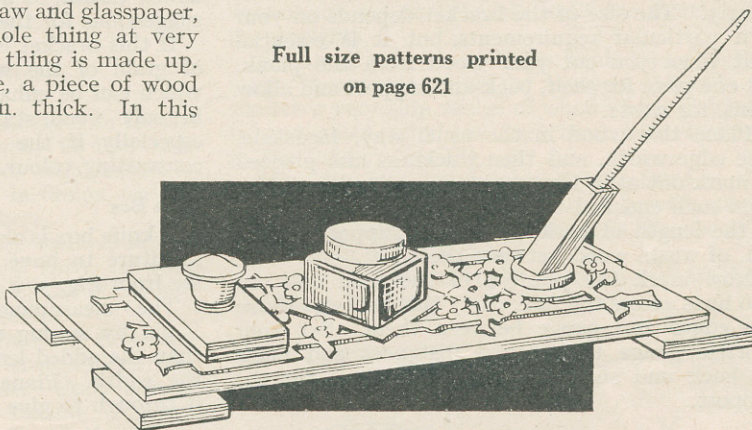
The pen holder is made up of four pieces glued together as shown.

It just depends, of course, on the size of the pen in use what the actual opening will be, but if you get four strips of $\frac{1}{8}$ in. wood $2\frac{3}{4}$ ins. long it should be just about right. Two of the strips are $\frac{5}{8}$ in. wide and the other $\frac{3}{8}$ in.

Glue all four together as shown in the diagram, then cut one end at an angle of about 60 degrees from the horizontal.

Cut a piece of cork and stuff in about $\frac{1}{2}$ in. long then glue the whole thing down on to the little

Full size patterns printed
on page 621



circular overlay E. This is merely a piece of $\frac{1}{4}$ in. wood $1\frac{1}{2}$ in. in diameter. When the pen holder is complete, glue it down to the circular portion of the base.

The little blotter consists of two pieces $\frac{1}{4}$ in. material 2 ins. long, $1\frac{1}{2}$ ins. wide. The lower one has its under end slightly rounded, and the two are held together by one of the Hobbies fancy knobs No. 5398.

The blotting paper itself is cut in strips 3 ins. long and the same width as the blotter, then turned round to fix in between the two pieces of wood as shown in the diagram.

The whole thing can be stained to a nice shade and polished, or the wood left in its natural state. Anyhow, you have quite a happy little gift for someone, and a piece of work which will fill in quite nicely half an hour or so of any spare time.

front and sides being mitred at the corners. It is best glued and pinned with panel pins.

If neatly made in cypress and nicely stained and varnished or polished it makes a very useful article of furniture. Handles of a simple modern type are fitted to the drawers and doors.

The AMATEUR CARPENTER

SOME SIMPLE THINGS TO MAKE

HERE are some simple things to make in carpentry—a useful bracket suitable to hold a flower vase or photograph and a knife box.

Fig. 1 shows the bracket and you can either copy this or think out an original shaped one yourself. You will see from this that the shelf is housed into the back and the shelf support is housed into both the back and the shelf.

Simple Small Brackets

If you refer to Fig. 2, you will see this more clearly. The size of the bracket depends on your own particular requirements, but it is essential that when you cut your wood from the plank, cut one piece for shelf, back and support and allow $1\frac{1}{2}$ ins. for waste.

Plane this wood in the usual way, face side, face edge width, and then thickness and proceed to mark out as in Fig. 3, cutting a line round $\frac{1}{4}$ in. from each end and then from these lines marking in the length of back, shelf, and support, giving $\frac{1}{2}$ in. of waste wood between them.

Now mark the position of the shelf and cut two lines across the face, carry this half way down the edges and gauge between them. Set your mortise gauge to required distances and mark on back and shelf the stopped grooves for the support.

All this may seem complicated, but by referring to Fig. 3 your difficulties will be explained. The design is the one suggested, but if yours is different, mark it out now and prepare to cut the joints.

First cut the open housing joint and then the stopped grooves on back and shelf. Then cut shape of back and support; cut off shelf and assemble.

Additional decoration may be added. Chamfered edges or stopped chamfers will give it an added charm, or a stencilled design on the back, suggestions for these are shown in Fig. 4.

If this bracket is made of hardwood the colour of grain of the wood has a particular beauty, which can be enhanced by polishing, but if made in soft wood, stain or paint is recommended especially if the chamfers are painted with a contrasting colour.

Knife Box

A knife box is always a useful article of domestic furniture to have in the house and as you will see from Fig. 5, it is fairly easy to make.

The measurements rest entirely with you. Begin by sawing one piece of wood 2 ins. longer than the added length of side and end, and twice the width. Plane this to thickness. Then saw it through to give the four required pieces. It is

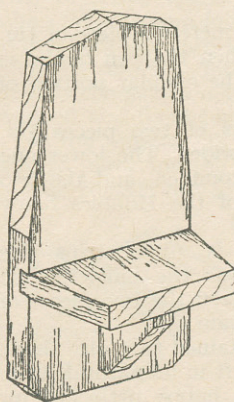


Fig. 1—The bracket complete

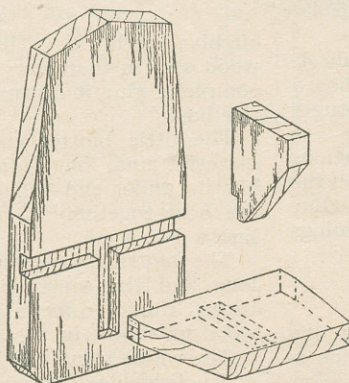


Fig. 2—The parts required

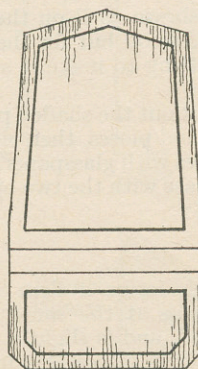


Fig. 4—Some styles of decoration

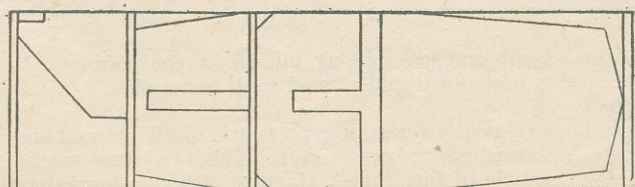
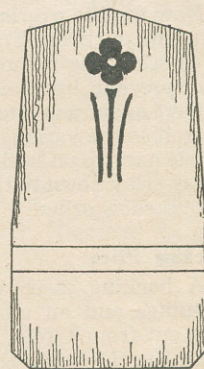


Fig. 3—How to mark out the wood from one piece

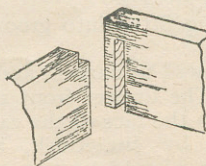


Fig. 6—A stopped joint

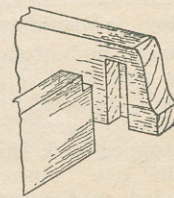


Fig. 7—A fancy end

much more convenient to plane one piece of wood to a certain thickness of width than it is to plane four separate pieces, particularly if they are small.

When this is done, square a cut line round each end and mark off the length of each side.

Two Methods

Figs. 6 and 7 show two different methods of making the joint. It is important that it is a stopped housing joint, because of the unsightly

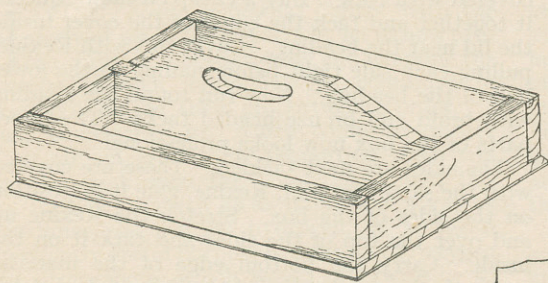


Fig. 5—A practical knife box

nature of the open type. Which of the two suggested types you adopt, however, is purely a personal matter.

When you have cut the four stopped housing joints proceed to mark out for the open joint to take the division and handle. It is important these joints are in the middle of both ends, so you are advised to fix both these pieces together in the vice and mark across both face edges together (see Fig. 8).

Making the handle is a simple matter. What shape you use depends on your own taste, but

always bear in mind that it should be one that is comfortable to handle.

Fig. 9 shows suggested shapes for these. Mark the shape on your wood but before shaping it, cut out the handle opening. This can be done with the fretsaw. Now shape the top of the wood and the tray part is ready for gluing.

Run some thin hot glue into the housing joint and cramp with a sash cramp. Then glue the division in position and, if necessary, cramp this too.

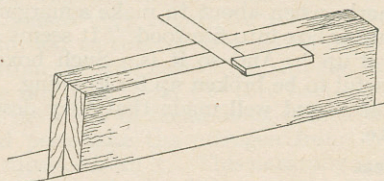


Fig. 8—How to mark out

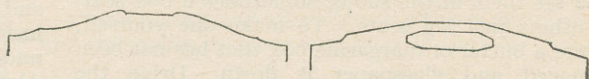


Fig. 9—Two alternative handle shapes

While this is drying, prepare the base. This can be 3-ply $\frac{1}{4}$ in. wood cut $\frac{3}{4}$ in. longer and wider than the tray itself to give a $\frac{3}{8}$ in. overlap all round. Chamfer the edges and drill the necessary holes for screwing this base on. When the glue is set (which is after 8 hours) take the cramps off and screw the base onto the tray.

The woodworking is now complete—a little finishing is all that is required. It is unwise to paint a knife box, because of the lead contained in paint; the best finish is one or two coats of good varnish.

A Simple Amusing Novelty

HERE is a little toy which is just the thing to amuse. The toy is easily made in a few minutes and seldom fails to rouse a good laugh. In fact you will find it hard to keep solemn yourself under the large variety of meek, pious, sly, and other "looks" that can be obtained.

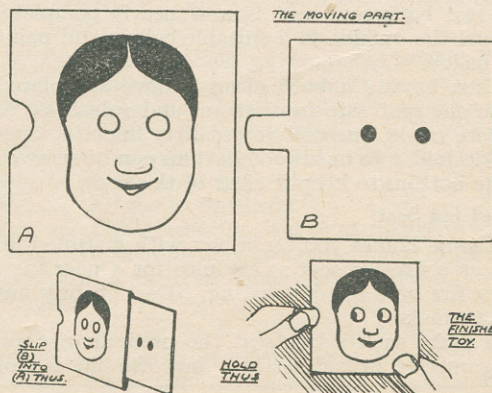
First of all procure an envelope (about post-card size) and gumming down the flap securely, cut off the one end, which makes a "pocket" of paper with one end sealed and one open. Upon the front of this draw a humorous face something after the one indicated (A) and at the eye positions cut two clear round holes. If you have access to a paper punch (used for filing papers) so much the better as this will make the holes very well.

From a Postcard

Now cut the section (B) from a postcard, a shade less than (A) with a tab at one end that will go through a slit at the sealed end of the envelope, and placing it inside (A) draw lightly two pencil circles that agree with the eye-holes.

Removing the card fill in the two circles till they are big black dots just a little less in size than the pencilled outlines.

Now replace the card and you will find that by holding the envelope as shown and moving the tab about the eye-balls (the dots) can be made to roll in the most grotesque and realistic fashion and also give a multitude of definite expressions.



BOX SEATS AND STORE CUPBOARDS

HOW many times have you heard people remark, when about to make a margarine or butter box into firewood, "It seems a pity to break it up." And so it is. Such boxes are far too useful to be broken up for kindling. They are so sturdy and well made that they deserve a better fate.

A Bath Seat

Every bathroom should have one or two seats. You see them in the shops, sometimes a box seat, at others just leg seats. To make one yourself, secure a butter or margarine box that has not been damaged and glasspaper it down. Drive the nail heads well home and fill all holes with plastic wood. Then give a final polish with glasspaper.

Half an inch down inside the box run a strip of batten round all the sides. Using half inch thick boards, make a lid that just fits the top of the box. Use half inch, three inch wide, battens to secure the boards together.

Place the lid in position and you will find that the battens of the lid rest on the battens inside the box, and provided a good fit has been made, the lid rests secure. The lid will not slide about if the battens have been cut to fit tightly inside the box.

The lid is now a seat but not a very comfortable one. To improve it, run inch wide beading round the edge of the lid so that half an inch stands up above the level of the lid. From a hardware store purchase a sheet of half inch thick cork, this is large enough to cover the seat. Cut off any overlap so that the mat just fits inside the beading fairly tightly.

Seat and Paint

Cork, especially the compressed granule type, is difficult to cut and will crumble unless a very sharp knife or razor blade is used.

A real bathroom seat is now nearly complete. Enamel the outside in a suitable colour and paint the inside.

When having a bath, clean clothes are placed inside the seat safe from steam and splashes. If two are made, one will do for dirty linen.

If desired, two hardwood battens can be screwed to the bottom to keep it clear of the floor.

Stuffed Lid Seat

In some homes you see a box with a stuffed lid used as a fireside seat; very nice for a near view of the fire or a bit of toasting. Dear to buy but easy to make.

To make such a box seat, the preliminaries are the same as just described, but the lid is not

covered with cork. Buy a cheap cushion, squeeze it together and tack the edges of the cover inside the lid near the beading. Cover this with Rexine, pulling each side tight before nailing to the lower half of the beading. Now run round the beading with braid and bronze headed tacks. The upper parts of the box now looks professional.

The sides are next tackled. These are covered with the same material, Rexine, glue it in position on the sides of the box. Stretch the Rexine up and over the top of the sides and tack it on the inside. Carry the bottom edge of the material under the box and tack it in position out of sight. Along the edges of the sides, tack some more braid to cover the edges of the material and give a balanced effect.

As the bottom is likely to scratch the floor, raise it by screwing a rubber doorstep at each corner as feet.

Inside the box can be stored books, toys, games, coal, records or needlework.

A Music Cabinet

That brings us to music and the storing of it. This is usually placed in the music stool and one can be made similar to the seat just described. Purchase four of those little carved legs from a woodwork shop and secure them to the bottom of the box with rail battens to prevent spreading. Rexine and a cushion can be used to cover the box. If this material does not appeal, use casement cloth, pile or even stair carpet, but do not glue such material, just stretch and tack it. Finishing off with braid as before.

Such seats can be made for the hobby hut, fitted with racks inside to store tools.

Garage and Garden Seat

Tools bring us to the garage where a low seat is often very handy. A false box is placed inside containing all the tools. When it is necessary to carry out repairs, the false box is taken out and placed alongside the seat so that everything is handy and you know just where to find the tools.

The garden opens up further possibilities for box seats. Raise them on small legs or battens and finish with several coats of paint. Cover the lid with lino or rubber so that the box is waterproof and the seat will dry easily. All sorts of garden tools can be placed inside, the tennis net, croquet gear, string hammock and so on. Always handy and yet secure from the weather.

Failing a supply of ready made boxes they can be constructed and a box is a very good item for a beginner to make.

Be sure to get next week's Enlarged Number



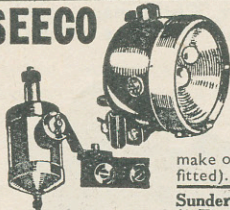
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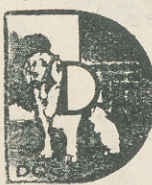
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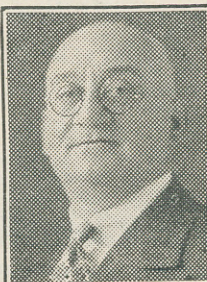
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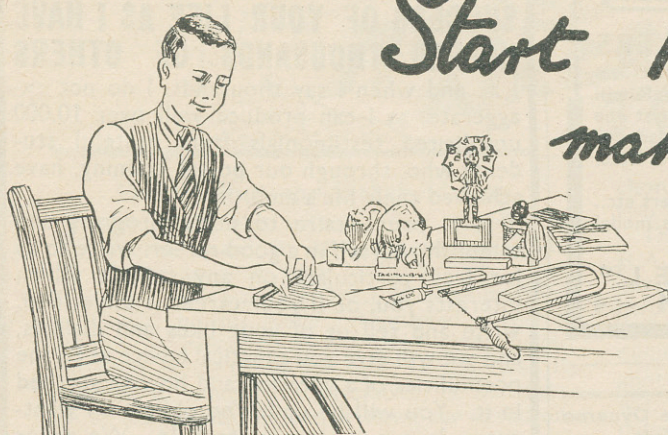
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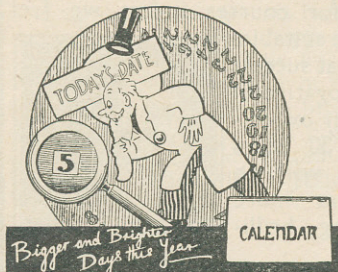


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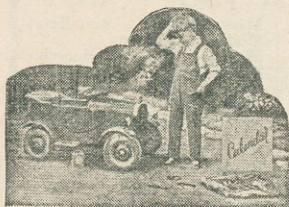


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MAKING SOUVENIRS FROM SEASHORE PEBBLES

A RAMBLE on the beach is one of the delights of the holiday season but as the days wear on even sea breezes and fine sea views can begin to pall. But when an intelligent and imaginative person begins to understand the meaning of the things that lie around, the longest summer day that has seemed too long and all monotony and dullness disappear before the marvels of the world lying around.

Nearly everyone picks up pretty and interesting pebbles. It is only when the return home to normal life has to be faced that they sometimes become a problem. But when these are too beautiful to be thrown away, it is good to know that they can, with a little patience, be turned into holiday souvenirs of very great interest and sometimes of value. It depends on the kind of pebbles that are picked up.

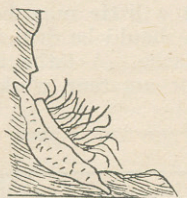
Two Kinds

There are two kinds of pebble. All pebbles are fragments of rock broken off a cliff and rounded by the action of the waves on the beach; some of these, however, are merely prettily coloured stones which, when polished, make fine ring stones.

They, like all pebbles, reveal their streaks of different colours best when cut, but even as rounded ornamental stones they are valuable.

The second kind of pebble is one which contains a fossil as in the sketch, and many are as big as an orange. Although all beaches have pebbles, some are better hunting grounds for fossil-bearing ones than others.

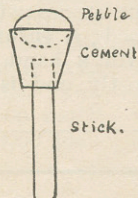
The south and south-east coasts of England, round about Devon and Cornwall, Isle of Wight and Weymouth, have all good pebble beaches and the east of Scotland at St. Andrews. Coasts which have cliffs of the sort depicted in the first sketch, are usually surrounded by the kind of beach which yields the richest harvest of fossil pebbles.



A living "zoophite" sea anemone



A geologist's hammer and a polishing stick

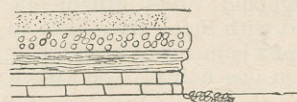


sediment from the land and from rivers settling at the bottom of the sea and hardened by pressure into solid rock.

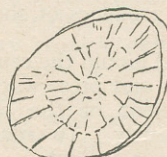
Volcanic action and various other agencies eventually heave them up to the surface to form the cliffs around our coasts. When the sediment was deposited at the bottom of the sea many marine animals were buried and perished.

The molluscs or shell dwellers being protected by shells, were turned into stone and this stone usually took the form of the shell or animal enclosed in it. These are the forms seen in pebbles.

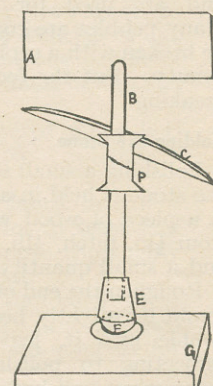
The living sea anemone of today may be the



How cliff formations are found



A fossil "zoophite" in a pebble and (above) a cut and polished agate



Apparatus for polishing a stone

fossil pebble of a thousand years hence. For this process of constant change or metamorphosis is going on in Nature all the time. So when you pick a pebble up and examine it for the story it tells, you are literally reading the history of the earth or the record of the rocks.

Geological Notes

A polished pebble is not only a thing of great beauty; it has also great geological interest. The beautiful marks, streaks and blotches of varying colours are caused by the infiltration of chemicals. A porous rock is turned a rusty brown by oxide of iron, copper causes blue and green stains, manganese a dark blotch or stain.

Most of the fossils have been impregnated while in a soft state, which accounts for the patterns being the shape of the body of the animal enclosed. Ornamental rocks such as agate, jasper and some of the green flints are often found in thin flat slices and can be ground and shaped for brooches, while large rounded lumps are easily converted into paperweights.

It is the pleasing mixture of these mineral streaks which make some of the agates, jaspers

The pebbles embedded in the pebble strata of the cliffs, once formed part of an ancient beach which has since been overlaid with a layer of rock and these pebbles have become imprisoned in what is known as conglomerate or masses of shingle and pebbles. Rocks are formed by

and calcedonys so beautiful. No book can adequately describe their appearance in the natural state or in the polished. Only a visit to a museum or, better still, to the shop of a working lapidary can give any idea, or a look at the shops where pebble ornaments are sold.

No two pebbles are alike. Agates being composed of a mixture of sandy rock and various metals are of varied colours; the most prized are the moss and a dark green one with light brown speckles, or a white with red fern design is suitable for a brooch.

Pendants, Pins and Necklaces

Eyed jasper with red and pale yellow streaks is very fine. Carnelians whether red or pale primrose are usually small and rounded and are fine ring stones or for pendants, pins and bead necklaces. Cairngorms are usually found on the Cairngorm Mountains of Scotland and are crystals, not pebbles.

They are polished in the same way as pebbles and are used for Highland dress ornaments. Many pebbles are coated with lime; they have to be broken with a geologist's hammer to reveal their beauty. Put the foot on one half of stone when breaking.

Holding the Stone

Polishing a small stone is easily accomplished if the stone is held in a holder as in sketch 2. This is a piece of wood with a lump of cement made from $\frac{1}{2}$ lb. pitch, $\frac{1}{4}$ lb. of resin, 2 ounces of shellac and a small quantity of beeswax.

Roughen the end of wood and mould the cement round it; slightly heat cement and press warmed pebble into it, leaving sufficient of the stone projecting to polish conveniently. To remove stone when polished slightly heat cement.

Before polishing, a touch of the lapidary's lathe may be necessary, but for amateur work an ordinary grindstone may be used to round it. Or a piece of sandstone will do, using plenty of water. Scratches are next removed with Water of Ayr stone (this is the stone used for sharpening razors).

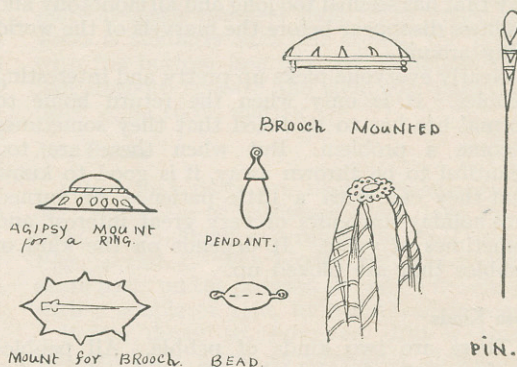
Polishing

Polishing is next. Use a flat piece of wood covered with felt and to this apply a small quantity of oil and emery powder, adding oil and powder whenever the felt gets dry. As the polishing proceeds the beauty of the stone will become apparent.

Finish with another board covered in a similar way, but use putty powder and oil or jeweller's rouge. The harder the stone, the more patience required. Stones of moderate hardness are best for beginners.

Polishing Apparatus

The simple apparatus for polishing as in sketch 5, works like a fiddle drill. The stone is fixed in the same kind of holder as before and the stick passes through a reel and works as a spindle on a piece of sandstone, using lots of water. The sharp end works in the socket of the block of wood at the top. As work proceeds substitute



Some specimens of how the stones are mounted and used

the Water of Ayr stone for the sandstone and finish with felt on board, hollowed out as the stone, using emery and putty powder as before.

Mounts can be bought for brooches, rings, pins and other small articles from a firm of manufacturing jeweller's whose name is obtainable from the Editor. Buy the mounts and grind and polish the pebbles to fit them. Made-to-measure ones are dearer.

Stone Mounting Cement

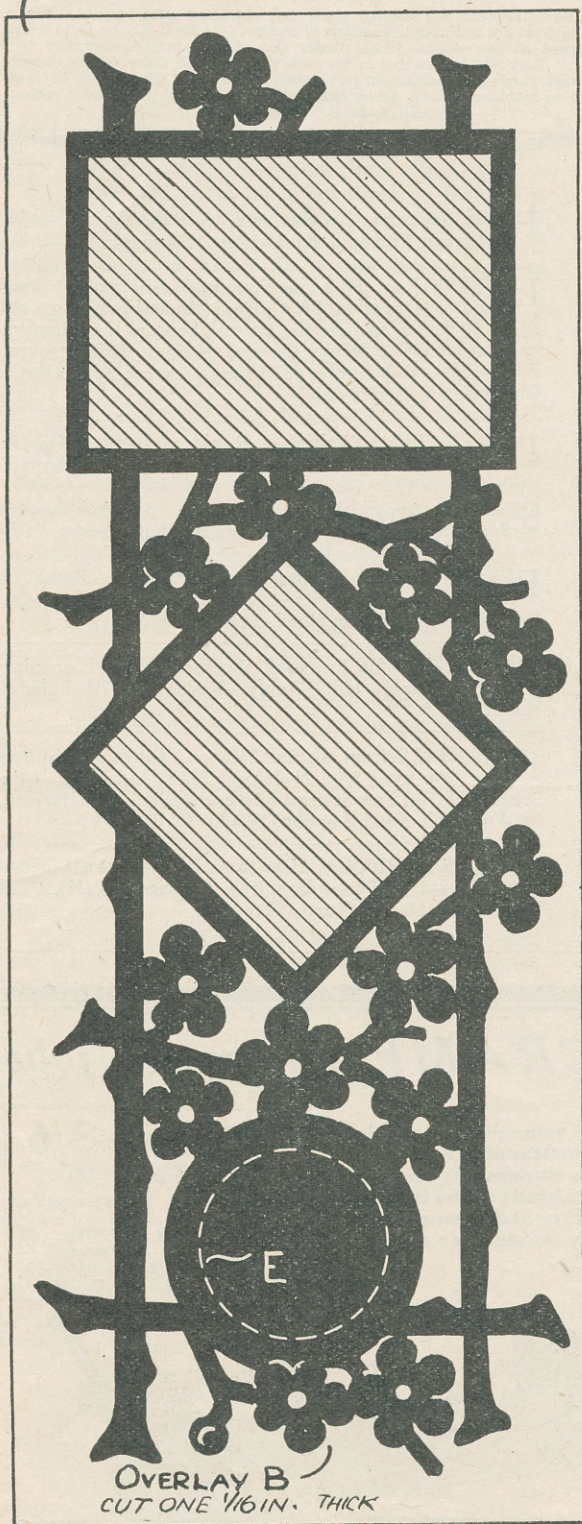
Cement for mounting stones on metal frames is made from 10 ozs. of gum arabic dissolved in a small quantity of proof spirit. To this add a small quantity of litharge (oxide of lead) or the cement for fixing stones in polishing stick may be used; it will hold as long as no heat is applied to it.

Brooch mounts with clips that fold over, hold the stones without cement but a little may be used; it ensures safety. Beads should be drilled with a hand drill or with a lathe. A lathe is costly and is not necessary for amateur work.

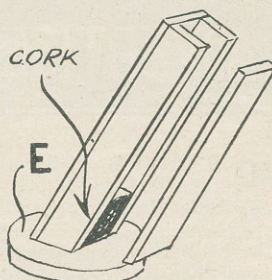
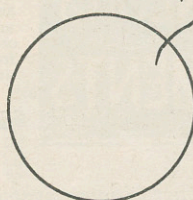
A Double Size Design Chart next week with details for making an OLD-TIME STAGE COACH MODEL

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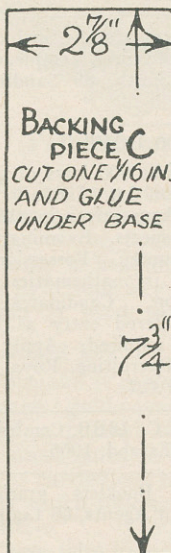
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ARE CUT AWAY



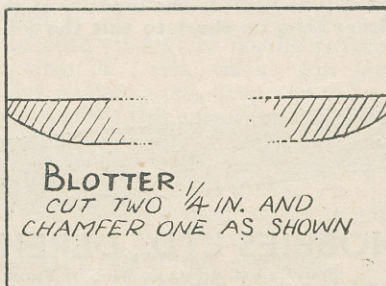
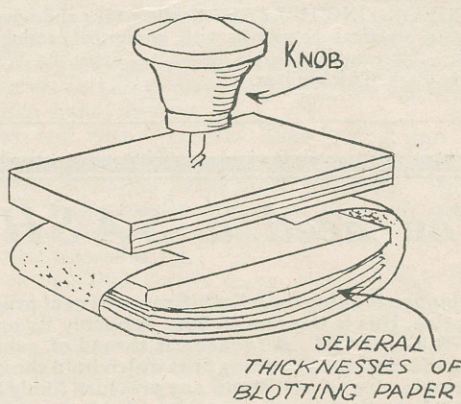
OVERLAY E
CUT ONE $\frac{1}{4}$ IN.



THE PEN HOLDER
IS MADE UP OF
FOUR PIECES GLUED
TOGETHER AS SHOWN



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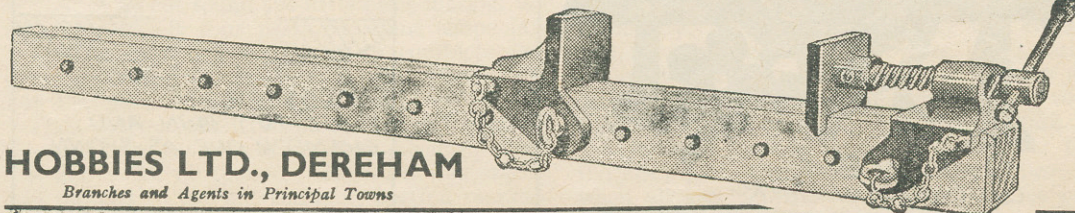
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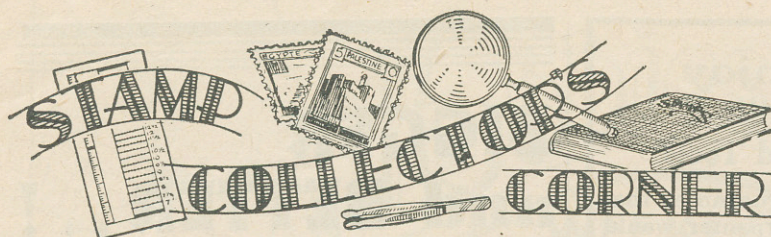
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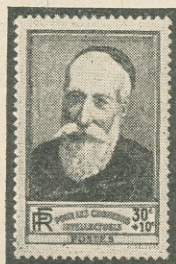
NOTES ON NEW ISSUES

LET us start off these notes with a stamp from France. It is the 30c. plus 10c., the premiums going to help the Intellectual Unemployed, or as we should call them, the 'black-coated workers.'

The stamp which you see illustrated shows us a portrait of Anatole France, who was a French writer born in 1844, and he published his first work thirty five years later.

The writer of these notes is always glad to hear of those who did not start being famous at about the age of five years—the World seems to be too full of such—for to his idea there is more credit due to the one who has had to work to attain fame than to the one who, as it were, finds fame waiting for him as soon as he is born.

Anatole France was literary critic to the great French Newspaper 'Le Temps' for a long time. Although he certainly was a cynic, yet the characters which he created show that at heart he was sympathetic. Most of his books have been translated into English, and among the best known are "The Crime of Sylvestre Bonnard," "Penguin Island" and "The Gods are Athirst." Anatole France died in 1924.



Anatole France

Notice that across the bottom of the stamp is shown his signature. By the way, we have already remarked upon one or two stamps which portray signatures; we shall have to devote a page to bringing these stamps together and finding out something about them.

The second illustration also

shows a French stamp. It is one from a set of three issued in connection with the sports and leisure periods of the French Postal workers. The premium of ten centimes on each stamp goes towards a fund to promote these open air sports.

The three stamps are the twenty centimes (illustrated) a forty centimes—this shows the finish of a race, and also a discus thrower, whilst the fifty centimes shows a group of hikers.

The first of this set was chosen for illustration because it shows the tug-of-war going on on the beach.

About fifteen years ago the writer was one of an amateur English Soccer team touring in France, and he there met a French Schoolmaster who could not understand that in England it was part of a schoolmaster's work to look after, and coach the boys in their sports.

The only game of football the French boys had was when one of their number possessed a football. Collecting a number of his pals with him the whole party went down on to the sands, and placing coats for goal posts started a game. There was no master to look after them to see that the rules were observed.



For the Sports Clubs

Such were the sports in a French school in those days, but now things are more after our own style though it is doubtful if every French school has its sports ground as has the average English school.

ANOTHER sporting stamp comes to us from Roumania.



Javelin Throwing

It is one of a set of eight stamps issued in connection with the seventh anniversary of the accession of King Charles II. In this case the premiums vary according to the value of the stamp, from the postal point of view, the money so collected going to the Federation of Roumanian Sports Clubs. Notice the badge and the letters U.F.S.R. immediately below.

The particular sport illustrated is javelin throwing.

The other values show:—the meeting of the U.S.F.R.; rowers; footballers (Association); skiers; swimmer; steeplechaser. On the three lei value there is a picture of King Charles II carrying a gun.

The stamp from Kedah illustrates the new set. Nine of these, ranging from the ten cents to the five dollars, are all of the same design showing a portrait of the Sultan Abdul Hamid Halim-shah.

Other new issues lately are from Czechoslovakia, Jugoslavia and Roumania, each of these countries having issued two stamps commemorating the 'Little Entente.' Liechtenstein has six new stamps, two of which show the castles of Vaduz and Gutenberg. The other four form a separate set and show the development of transport facilities within the country.

The United States of America has two five cents stamps. One



The New Kedah Stamp

of them shows a picture of West Point Military Academy, and the other shows two cadets from the Naval Academy. West Point Academy is one of the training schools for officers of the United States Army. It takes cadets from the age of 17 and gives them a four-year course. Then they are given Army commissions.

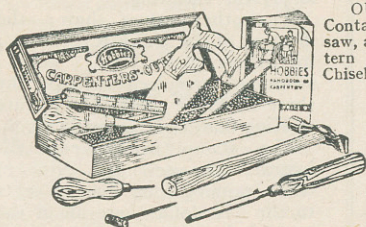
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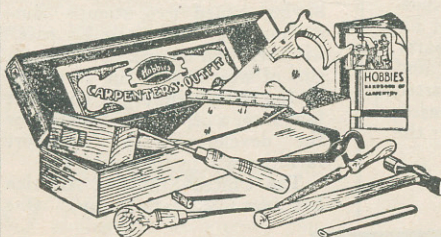


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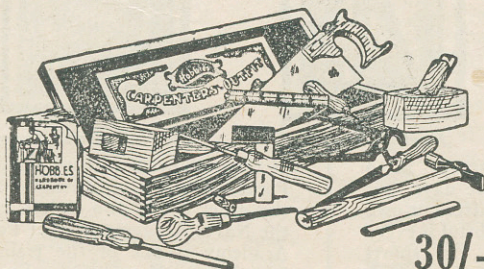
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17/6

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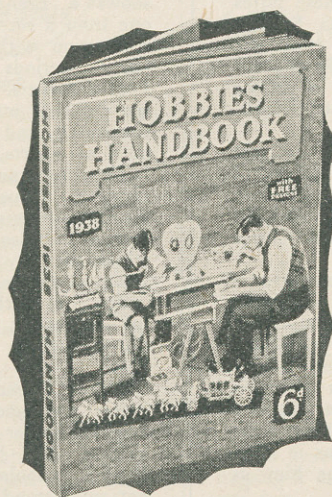


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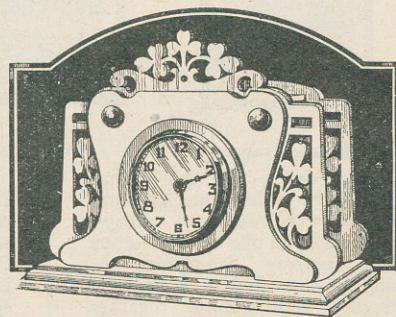
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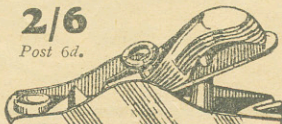
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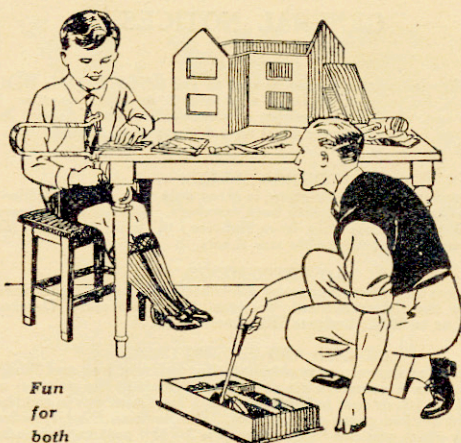
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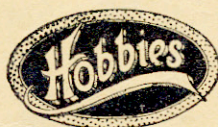
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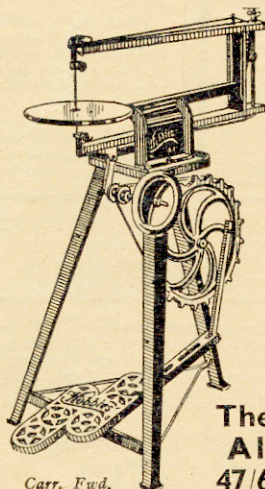


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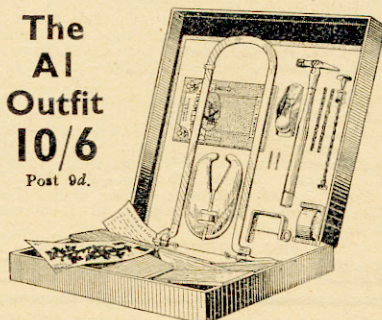
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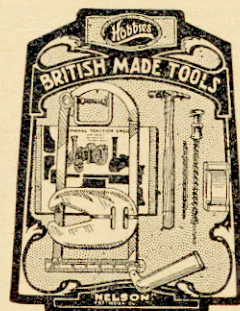
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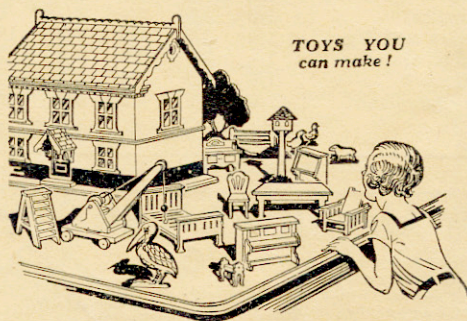


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